

REMARKS

Pursuant to 37 CFR 1.111, reconsideration of the Official Action dated August 29, 1997 is respectfully requested.

The above amendments are presented to better define the subject matter which applicants regard as their invention. In accordance with 37 CFR 1.116(a), applicants respectfully submit that the above amendments present the rejected claims in better form for consideration on appeal. Basis for the amendments to claim 1 is found in the specification inter alia at page 2, lines 23 to 31, and page 4. Since the same changes were previously presented for claim 21, no "new issues" are present. For the reasons discussed below, applicants respectfully submit that their application is now in condition for allowance.

Relying on 35 U.S.C. §103, the Examiner has rejected claims 1 to 29 alleging the subject matter thereof would have been obvious to a person of ordinary skill in the art, at the time applicants made their invention, in view of the disclosures of U.S. Patent No. 5,008,474 to Walraevens considered together with Published International Application WO 89/12614 to Rao and a publication by Lovelace. Applicants respectfully traverse the Examiner's rejection, and request reconsideration.

The Examiner asserts that:

The use of vinyl chloride and vinylidene chloride in hydrofluorination processes in general is so well known that the use of one would immediately suggest the use of the other to one of ordinary skill in the art.

Applicants respectfully submit that the above-quoted statement is an unsupported statement of fact. Pursuant to 37 CFR 1.107(b), applicants respectfully call upon the Examiner to submit his own Declaration or Affidavit in support of the above-quoted statement.

The present invention provides an improved process for making 1-chloro-1-fluoroethane and/or 1,1-difluoroethane from vinyl chloride and hydrogen fluoride while, at the same time avoiding the unwanted formation of heavy halogen-containing side products as described in the specification at page 2, lines 23 to 31, and set forth in claims 1 and 21. Applicants respectfully submit that this important feature of the invention is neither disclosed nor suggested by any of the references.

Applicants' prior remarks concerning Walraevens and Rao set forth in the Preliminary Amendment filed March 20, 1996 at pages 2 to 8 are incorporated herein by reference. Applicants'

prior remarks regarding the Lovelace reference set forth in the Amendment filed June 4, 1997 at pages 4 and 5 are incorporated herein by reference. In response to the Declaration by Janssens, the Examiner states:

[T]he instant rejection is not predicated upon an assumption of analogous reactivity but upon the reasonable expectation that a known useful product would be obtained if vinyl chloride is used in the prior art process.

The present claims do not specify a process for producing **any** "known useful product", but rather specify a process for the manufacture of 1-chloro-1-fluoroethane, 1,1-difluoroethane, or mixtures thereof. Applicants respectfully submit that the **evidence** of record clearly demonstrates that claimed process would not have been obvious to a person of ordinary skill in the art in view of the reference disclosures.

The Examiner's attention is respectfully directed to the examples in applicants' specification at pages 9 to 14. In particular, the Examiner's attention is respectfully directed to Examples 1(C) and 4(C) which have been carried out in accordance with the prior well-known processes discussed at

pages 1 and 2 of the specification. These examples are to be compared with Example 3 (with respect to comparative example 1(C)), and with Example 5 (with respect to comparative example 4(c)). Examples 3 and 5 have been carried out in accordance with the subject matter of claims 1 or 21.

The Examiner's attention is respectfully directed to Table I at page 14 of the specification. Therein the Examiner will note that the claimed process (as in Examples 3 and 5) leads to reduced formation of heavy halogen-containing side products (expressed as selectivity on the basis of vinyl chloride converted). Comparing Example 3 to comparative example 1(C), the Examiner will note that in Example 3 heavy halogen-containing side products constituted 8% whereas in comparative example 1C these heavy halogen-containing side products constituted 35%. Similarly, comparing Examples 5 (according to the invention) with comparative example 4(C), the Examiner will note that in comparative example 4(C) the heavy halogen-containing side products constituted 25% whereas in Example 5 according to the invention the heavy halogen-containing side products constituted 4%.

When considering all aspects of the chemical principals of the involved reactions (reactivity, thermodynamics, kinetics, etc.), nothing in the prior art discloses or suggests that the

claimed process would allow the reduction of formation of heavy halogen-containing side products **by more than four times** in the specified chemical reaction. Applicants respectfully submit that the evidence of record clearly demonstrates the unobvious nature of the claimed invention.

Referring to the previous discussion of the chemical reactions presented in the Amendment filed February 17, 1995 and incorporated herein by reference, applicants respectfully submit that logically, increasing the concentration of 1-chloro-1-fluoroethane, 1,1-difluoroethane and/or 1,1-dichloroethane, the preferred solvents used in the claimed process, would increase the concentration of vinyl chloride in the reaction medium. As vinyl chloride is the precursor of the heavy halogen-containing side products, a person of ordinary skill in the art (not aware of applicants' invention) would expect that there would be **an increase** in the formation of these heavy halogen-containing side products. In fact, exactly the opposite effect is observed. Applicants respectfully submit that clearly a person of ordinary skill in the art would not have found the claimed invention obvious from the reference disclosures. Applicants therefore respectfully request the Examiner to reconsider and withdraw the rejection of the claims under Section 103.

For the reasons discussed, applicants respectfully submit that their application is now in condition for allowance. The Examiner is respectfully requested to call the undersigned attorney if any minor matter remains.

Respectfully submitted,

A handwritten signature in dark ink, reading "John W. Schneller". The signature is written in a cursive style with a horizontal line drawn underneath it.

John W. Schneller
Registration No. 26,031
SPENCER & FRANK
Suite 300 East
1100 New York Avenue, N.W.
Washington, D.C. 20005-3955
Telephone: (202) 414-4000
Telefax : (202) 414-4040

JWS:nm